Bella Vista Apartments

TRAFFIC IMPACT STUDY

March 26, 2015

Prepared For:
Warger Associates, LLC
1617 Swift
North Kansas City, MO 64116

Prepared By:
Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747

March 26, 2015

Mr. Steve Warger
Warger Associates, LLC
1617 Swift
North Kansas City, Missouri 64116

Re: Bella Vista Apartments – Parkville, MO

Dear Mr. Warger:

In response to your request, Priority Engineers, Inc. has completed a traffic impact study for the above referenced project. The purpose of the analysis is to determine the potential traffic impacts associated with this development on the intersections and streets surrounding this site, primarily during the AM and PM peak hours. The following report documents our analysis and recommendations.

We appreciate the opportunity to work with you on this project. Please contact us with any questions or if you require additional information.

Sincerely,

PRIORITY ENGINEERS, INC.

Kristin L. Skinner, P.E., PTOE
President

Priority Engineers, Inc.
31720 S McClain Road
Harrisonville, MO 64701
816.738.4400

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1) INTRODUCTION

The purpose of this study is to examine the potential traffic impacts associated with the proposed Bella Vista Apartments and a VFW Hall located on the southeast corner of Missouri Highway 45 and Lakecrest Lane in Parkville, Missouri. Access to the apartments will be through an extension of Lakecrest Lane to the south.

The study area is shown in Figure 1. The site layout is shown in Figure 2.

2) EXISTING CONDITIONS

The existing site consists of a wooded property on the south side of Missouri Highway 45, to the east of Lakecrest Lane. Lakecrest Lane currently provides access to a dental office and ends approximately 250' south of the dental office drive.

Missouri Highway 45 is a four lane arterial roadway with a raised median. The posted speed limit adjacent to the property is 45 miles per hour and transitions to 35 miles per hour to the east at Graden Road.

The site is bordered to the west by a golf course and a dental office. To the southwest are single family homes which transition to multi-family units to the southeast. To the east of the property is a commercial/small industrial area which has primary access to Missouri Highway 45 through the Bell Road intersection. On the north of Missouri Highway 45, there is a gas station and commercial uses with a full access driveway opposite Lakecrest Lane.

Peak Hour turning movement traffic counts for the Missouri Highway 45 intersections with Blair Road, Lakecrest Lane, Graden Road, and Bell Road. These counts were conducted between March 3-5, 2015 between the hours of 7:00 and 9:00 AM and from 4:00 to 6:00 PM. The peak hours were determined to be 7:00 to 8:00 AM and from 5:00 to 6:00 PM. The complete traffic counts are shown in Appendix II. The peak hour traffic volumes and existing lane configurations are shown in Figures 3-7.

3) PROPOSED DEVELOPMENT

The Bella Vista Apartments will consist of 300 units in three separate buildings. The VFW will be 3,500 square feet and will be located on the east side of Lake Crest. The proposed site plan is shown in Figure 2. As part of this development, Lakecrest Lane will be extended to the southeast to provide access to the proposed apartment buildings. An additional 12' fire lane will be provided off of Lime Stone Road. This access will be gated and will not be an available access for apartment residents.

Lakecrest Lane will be widened to include a short left turn lane and a through/right lane. Additionally, an eastbound right turn lane will be constructed on Missouri Highway 45.

4) TRIP GENERATION

The vehicle trips generated by the proposed development were estimated using the Institute of Transportation Engineers' Trip Generation, 9th Edition. Land Use 220, Apartment, was used for the apartments. Land Use 591, Lodge/Fraternal Organization, was considered for the VFW Hall. However, this use has only one site that was surveyed in 1977. Instead, Land Use 925,

Drinking Place, was used. The estimated AM and PM peak hour traffic volumes associated with these uses are shown in Table 1.

Table 1: Trip Generation

		AM Peak			*PM Peak*		
Land Use	***Intensity***	***Total***	***In***	***Out***	***Total***	***In***	***Out***
Apartment	300 units	*153*	*31*	*122*	*186*	*121*	*65*
Drinking Place	3,500 SF				*40*	*26*	*14*
Total		**153**	**31**	**122**	**186**	**121**	**65**

5) TRIP DISTRIBUTION

Trips generated by the Bella Vista Apartments were distributed based on existing traffic flows and a general analysis of the surrounding area. The trips were distributed onto the existing street system approximately as follows:

- 60 percent to/from the east on Missouri Highway 45
- 25 percent to/from the west on Missouri Highway 45
- 7 percent to/from the south on Bell Road via Missouri Highway 45 to the east
- 6 percent to/from the north on Lakecrest Lane (to the commercial properties)
- 1 percent to/from the north on Graden Road via Missouri Highway 45 to the east
- 1 percent to/from the north on Blair Road via Missouri Highway 45 to the west

The proposed development trips are shown in Figures 7-8.

6) SIGHT DISTANCE

Intersection sight distance was verified for the Lakecrest Lane intersection with Missouri Highway 45. Intersection sight distance represents the distance and time required for the driver to make the decision to turn and to complete the turn without slowing oncoming traffic. The sight distance to the east and to the west exceeds 1000'. The required intersection sight distances are illustrated in Table 2 below.

Table 2: Sight Distance Values

	Measured Distances	AASHTO Distances (45 mph)	AASHTO Distances (50 mph)
Lakecrest Lane			
To the East	>1000'	530'	590'
To the West	>1000'	430'	480'

7) SIGNAL WARRANTS

The Manual of Uniform Traffic Control Devised (MUTCD) peak hour signal warrants were consulted for the intersection of Lakecrest Lane and Missouri Highway 45. This intersection is not expected to warrant a traffic signal in either the proposed or future design year (2035) scenarios. The primary reason that this intersection will not meet the peak hour signal warrant is due to the low volume on Lakecrest Lane. Lakecrest Lane is expected to have only 123 exiting vehicles in the AM Peak Hour and 91 in the PM Peak Hour.

8) AUXILIARY TURN LANES

Section 940.9 of the Missouri Department of Transportation Engineering Policy Guide was consulted to determine that an eastbound right turn lane would be required at the Lakecrest Lane and Missouri Highway 45 intersection. This turn lane should be constructed with 120' deceleration length and a 100' taper.

9) LEVEL OF SERVICE AND VOLUME/CAPACITY ANALYSES

Capacity analysis was used to quantify the impacts of the increased traffic on the intersections studied. The methodology outlined in the Highway Capacity Manual, 2000 Edition, was used as a basis to perform the analysis for this study. Capacity analysis defines the quality of traffic operation for an intersection using a grading system called Level of Service (LOS). The LOS is defined in terms of average vehicle delay. Levels of service A through F have been established with A representing the best and F the worst.

Table 4: Level of Service Definitions

Level of Service	*Unsignalized Intersection*	*Signalized Intersection*
A	< 10 Seconds	< 10 Seconds
B	< 15 Seconds	< 20 Seconds
C	< 25 Seconds	< 35 Seconds
D	< 35 Seconds	< 55 Seconds
E	< 50 Seconds	< 80 Seconds
F	≥ 50 Seconds	≥ 80 Seconds

The study intersections were evaluated using Synchro, an analysis package based in part on Highway Capacity Manual methods. The analysis reports are included in Appendix II.

Existing Conditions

The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 5 and 6 in Appendix I. The overall level of service at the signalized intersections is a B in both the AM and PM Peak Hour. Southbound Graden Road and southbound Lakecrest Lane experience levels of service D and E during the peak hours. Low levels of service at stop controlled intersections during peak hours are not uncommon, and the queue lengths are less than two vehicles.

Proposed Conditions

This scenario represents the existing traffic combined with the full build out of the Bella Vista Apartments and the VFW Hall. The levels of service and queue lengths at the surrounding intersections are only slightly impacted by the additional development traffic on Missouri

Highway 45. At the intersection of Lakecrest Lane with Missouri Highway 45, the southbound movement lowers to a level of service D in the AM peak hour and an F in the PM Peak hour. The northbound left, exiting the Bella Vista apartments, is a level of service F in both the AM and PM Peak Hours. The 95th percentile queue, for this movement will be approximately 7 vehicles in the AM and 10 vehicles in the PM. As mentioned in Section 7 of this report, the intersection is not expected to meet peak hour signal warrants due to the low volumes on Lakecrest Lane.

Levels of service, lane configuration and design queue lengths for the proposed conditions are shown in Figures 9 and 10.

10) FUTURE CONDITIONS

A future scenario was created in order to estimate traffic volumes through study intersections in the year 2035. A 2% growth factor was applied to background traffic volumes to generate this scenario which is illustrated in Figures 11-14 in Appendix I. Additionally, trips were estimated for the undeveloped site on the north side of the Bell Road and Missouri Highway 45. A site plan is not available for this site, but trips equivalent to a 24,000 square foot supermarket and a 6,400 square foot high-turnover sit down restaurant were assumed.

As traffic volumes on Missouri Highway 45 increase, left turns at stop controlled entrances become increasingly difficult with increased delays. The level of service at the Lakecrest Lane intersection remains an F with significant queuing and delay. As volumes on Missouri Highway 45 increase, this intersection may need to be considered for signalization due to the lack of alternative routes. Another alternative would be the improvement of the proposed fire lane to provide access to Missouri Highway 45 through the Bell Road signal.

11) RECOMMENDATIONS & CONCLUSIONS

This study documents the impact of the proposed Bella Vista Apartments and the VFW Hall on the adjacent intersections during the AM and PM peak hours. As a result of this development Lakecrest Lane will be extended to the south to provide access to the proposed site. The intersection of Lakecrest Lane and Missouri Highway 45 should include the following improvements:

- Northbound left turn lane
- Eastbound right turn lane – 120’ minimum length with 100’ taper

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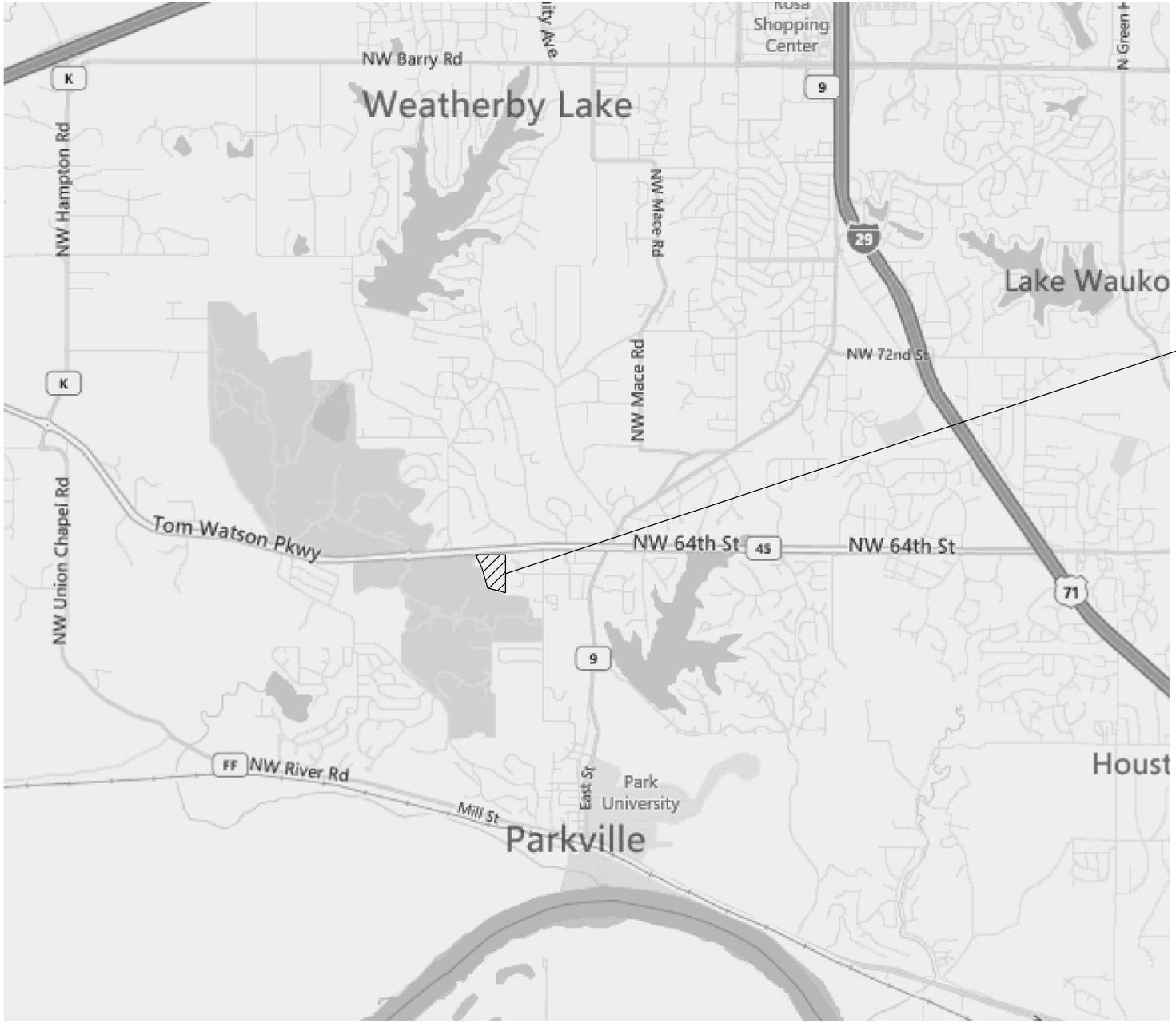

Project Location

Bella Vista Apartments
Parkville, MO

No Scale

Figure 1

Priority
ENGINEERS
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Garden City, MO 64747
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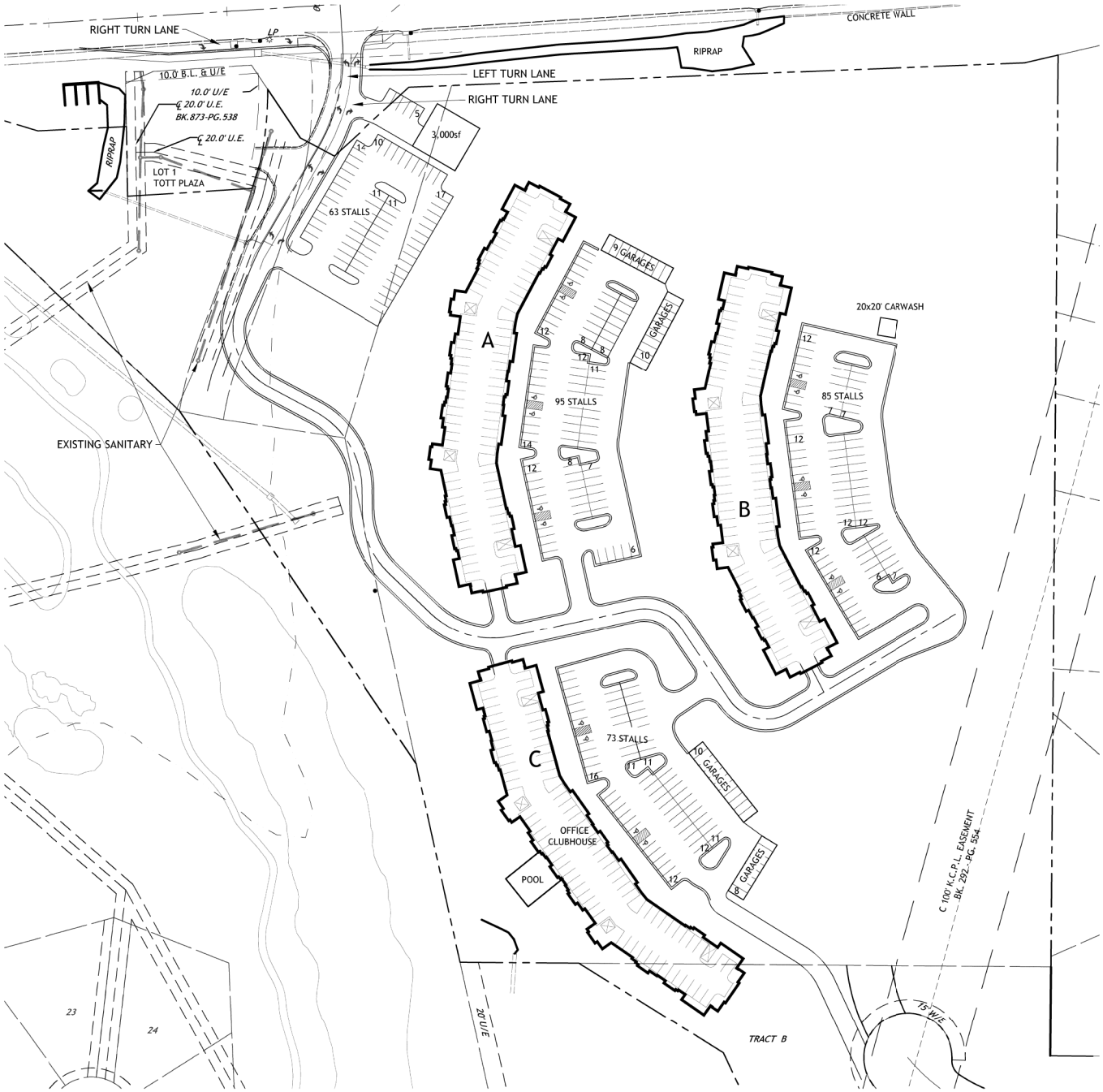

Site Plan

Bella Vista Apartments
Parkville, MO

No Scale

Figure 2

Priority
ENGINEERS
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Garden City, MO 64747
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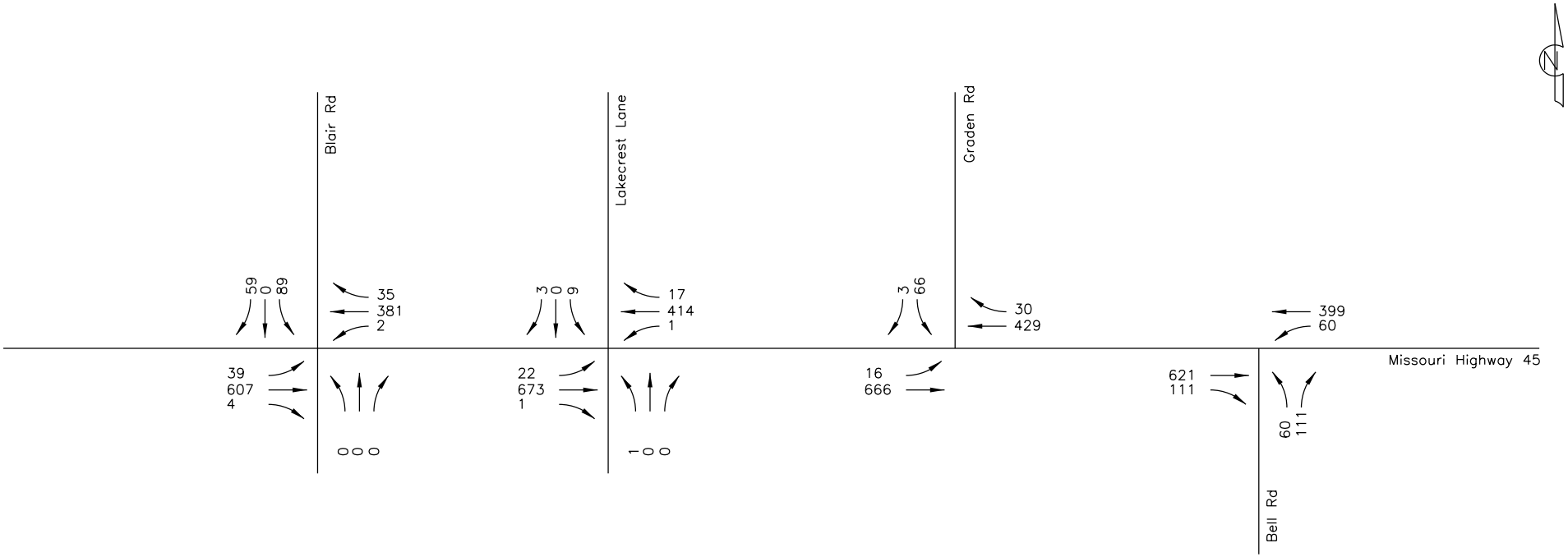

LEGEND

Total Volume

Existing AM Peak Hour
Traffic Volumes

Bella Vista Apartments
Parkville, MO

No Scale

Figure 3

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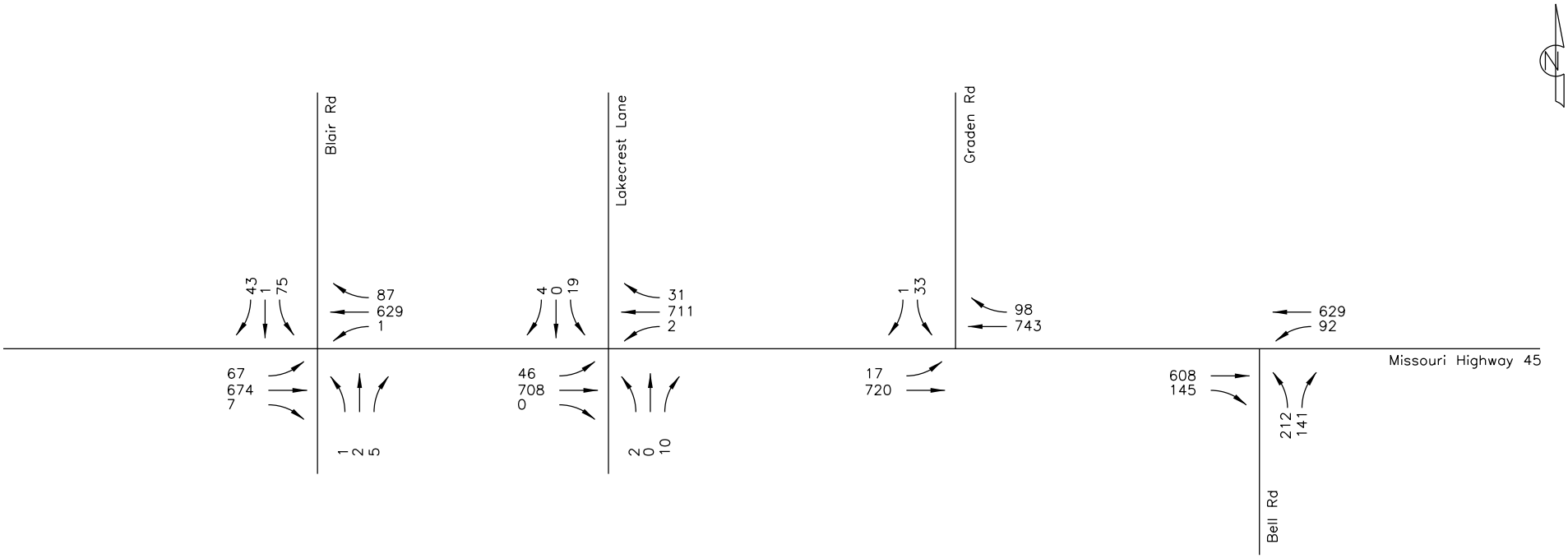

LEGEND

Total Volume

Existing PM Peak Hour
Traffic Volumes

Bella Vista Apartments
Parkville, MO

No Scale

Figure 4

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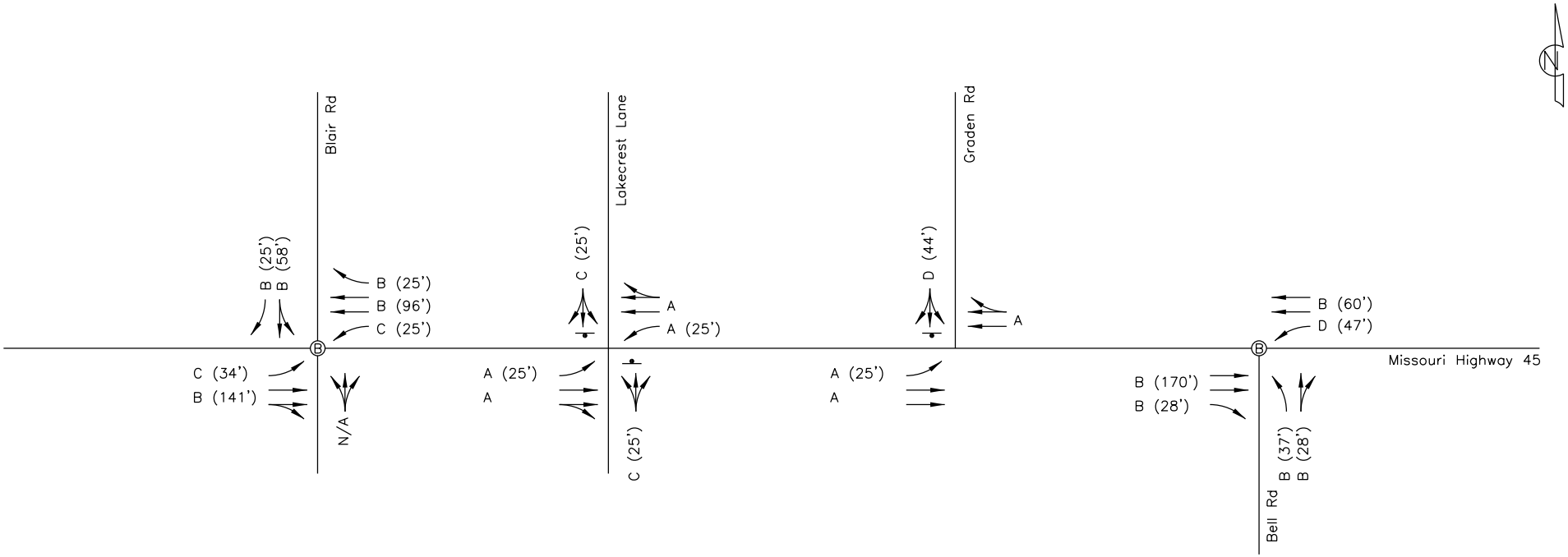
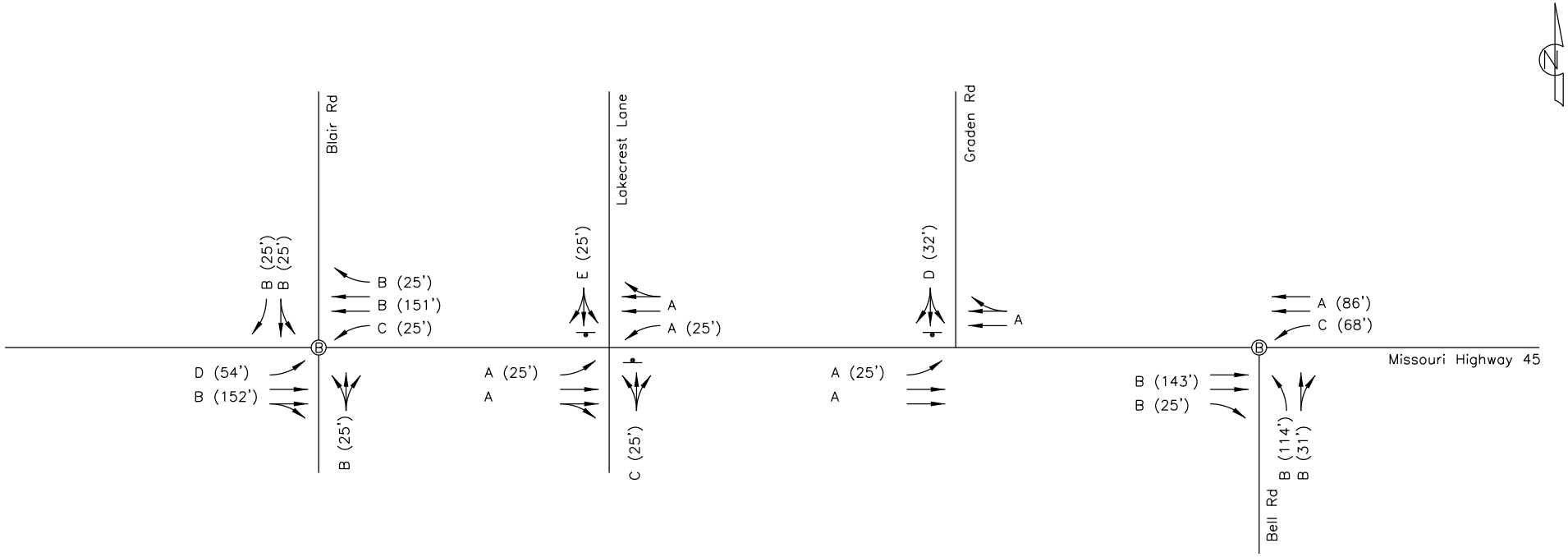


LEGEND

- HCM LOS (95th Percentile Queue)
- Stop Sign
- Ⓐ Traffic Signal LOS

Existing AM Peak Hour Lane Configuration & Levels of Service	Bella Vista Apartments Parkville, MO	No Scale Figure 5	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



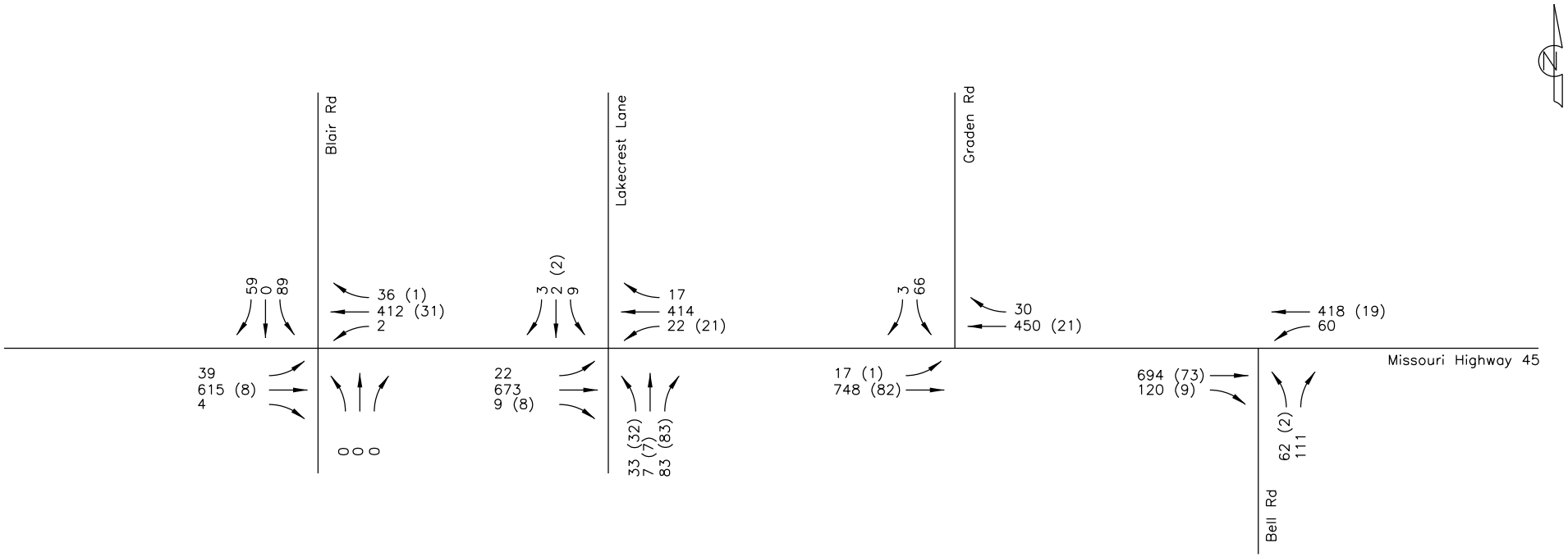
LEGEND

HCM LOS (95th Percentile Queue)

Stop Sign

Traffic Signal LOS

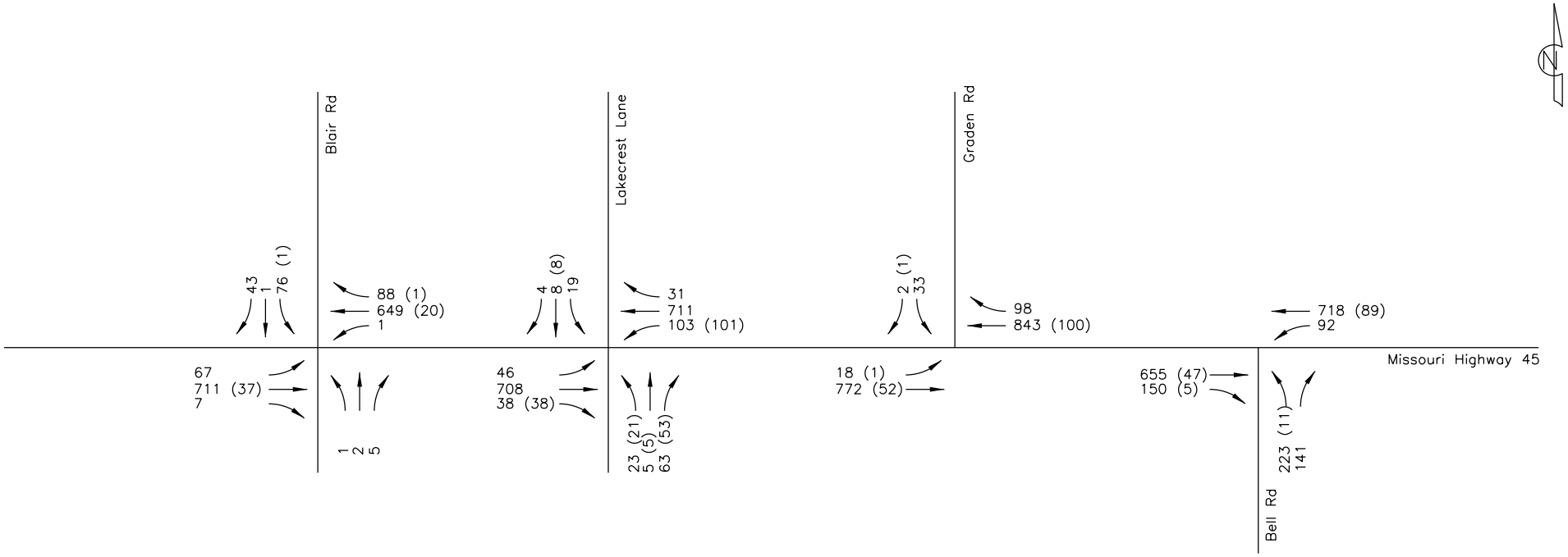
Existing PM Peak Hour Lane Configuration & Levels of Service	Bella Vista Apartments Parkville, MO	No Scale Figure 6	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume (Proposed Development)

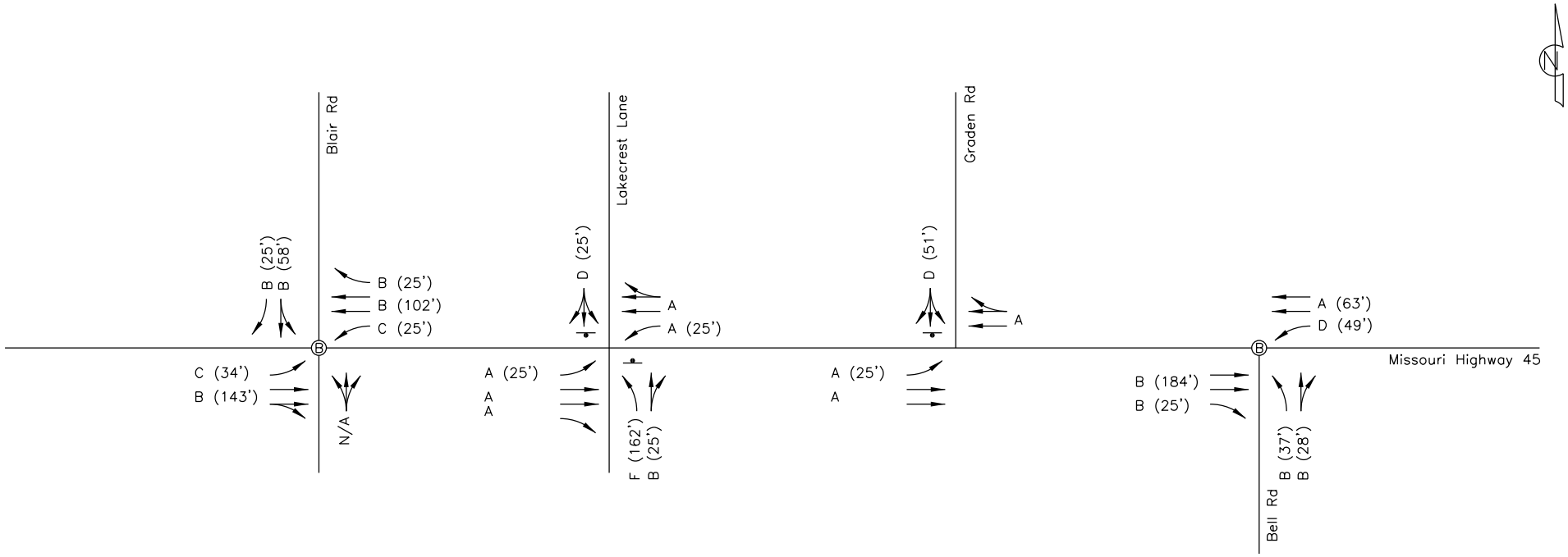
Existing + Proposed Development AM Peak Hour Traffic Volumes	Bella Vista Apartments Parkville, MO	No Scale Figure 7	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

Total Volume (Proposed Development)

Existing + Proposed Development PM Peak Hour Traffic Volumes	Bella Vista Apartments Parkville, MO	No Scale Figure 8	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



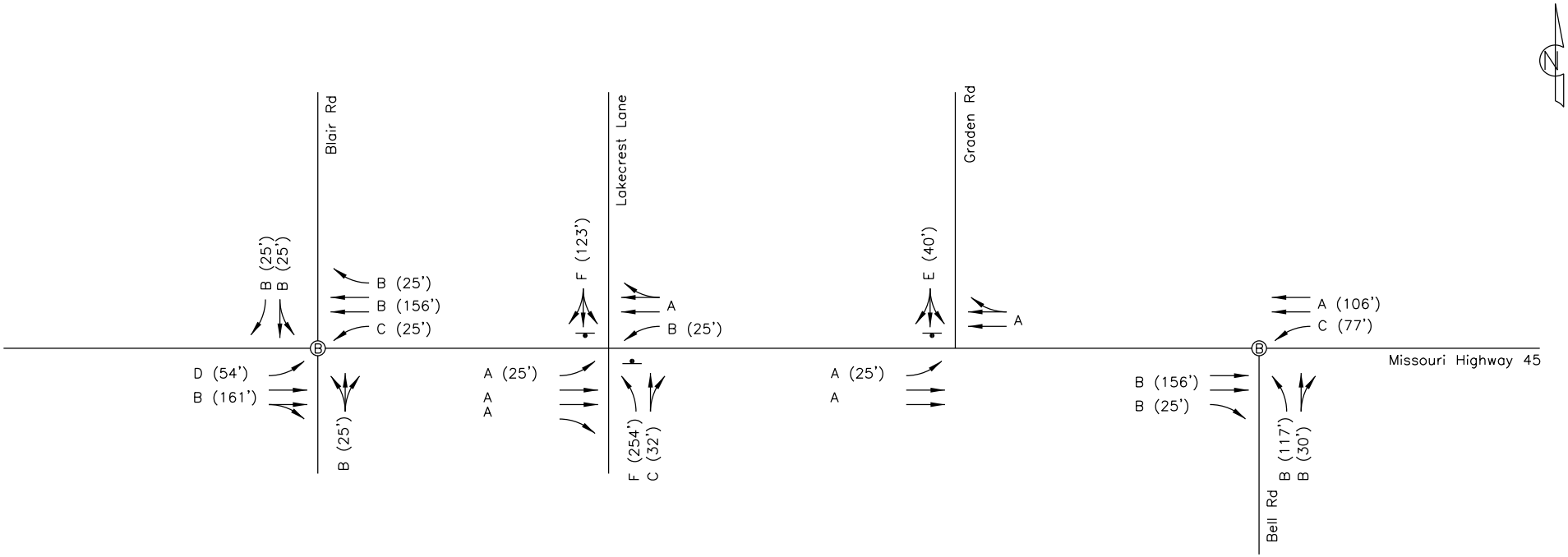
LEGEND

HCM LOS (95th Percentile Queue)

Stop Sign

Ⓐ Traffic Signal LOS

Existing + Proposed Development AM Peak Hour Lane Configuration & Levels of Service	Bella Vista Apartments Parkville, MO	No Scale Figure 9	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

HCM LOS (95th Percentile Queue)

Stop Sign

Ⓐ Traffic Signal LOS

Existing + Proposed Development
PM Peak Hour Lane Configuration
& Levels of Service

Bella Vista Apartments
Parkville, MO

No Scale

Figure 10

Priority ENGINEERS
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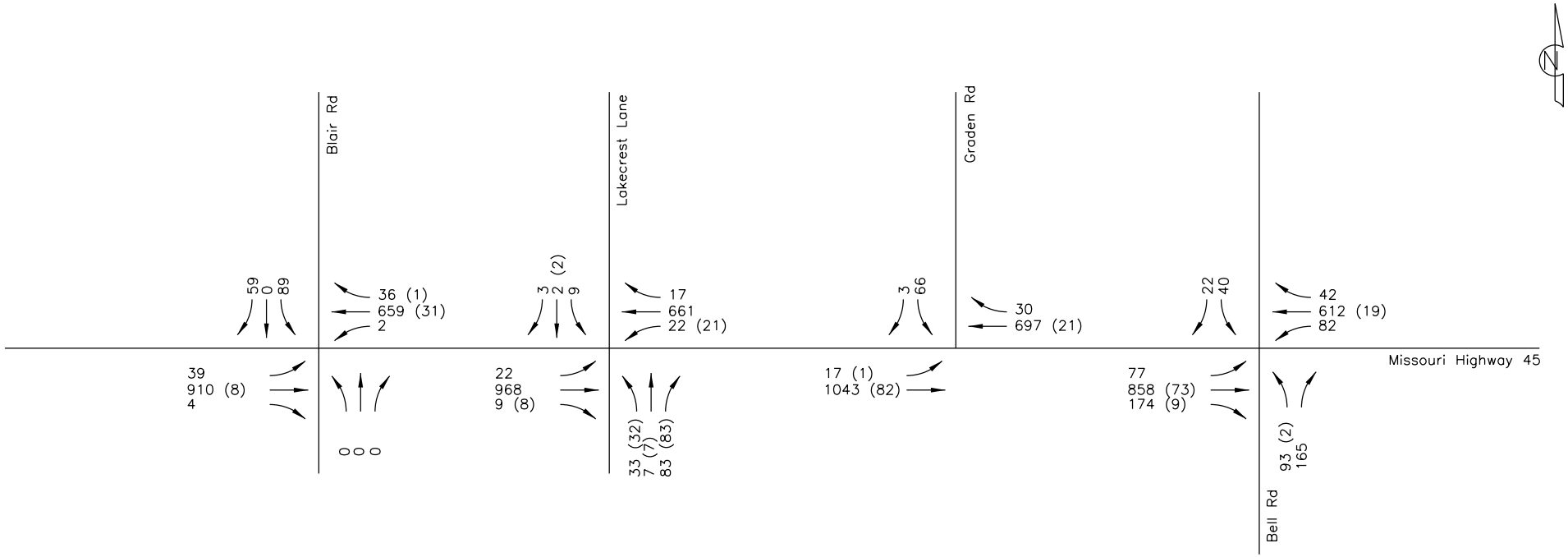
Garden City, MO 64747
816.738.4400



LEGEND

Total Volume (Proposed Development)

Future (2035) AM Peak Hour Traffic Volumes	Bella Vista Apartments Parkville, MO	No Scale Figure 11

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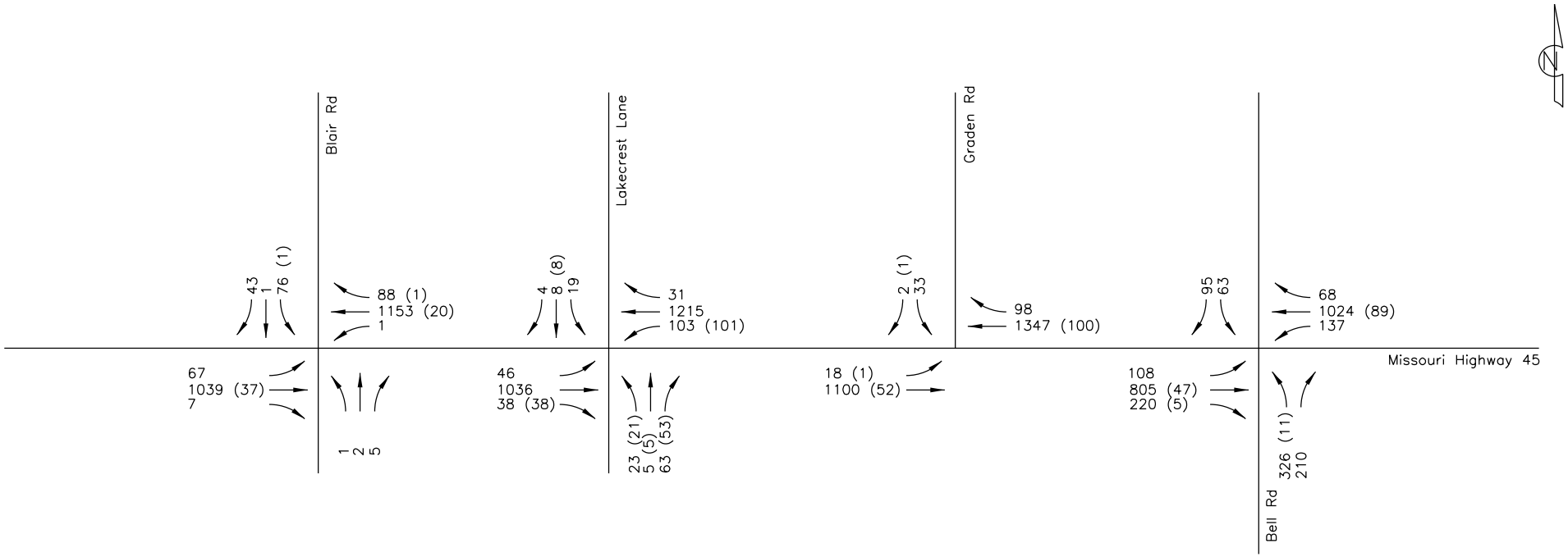
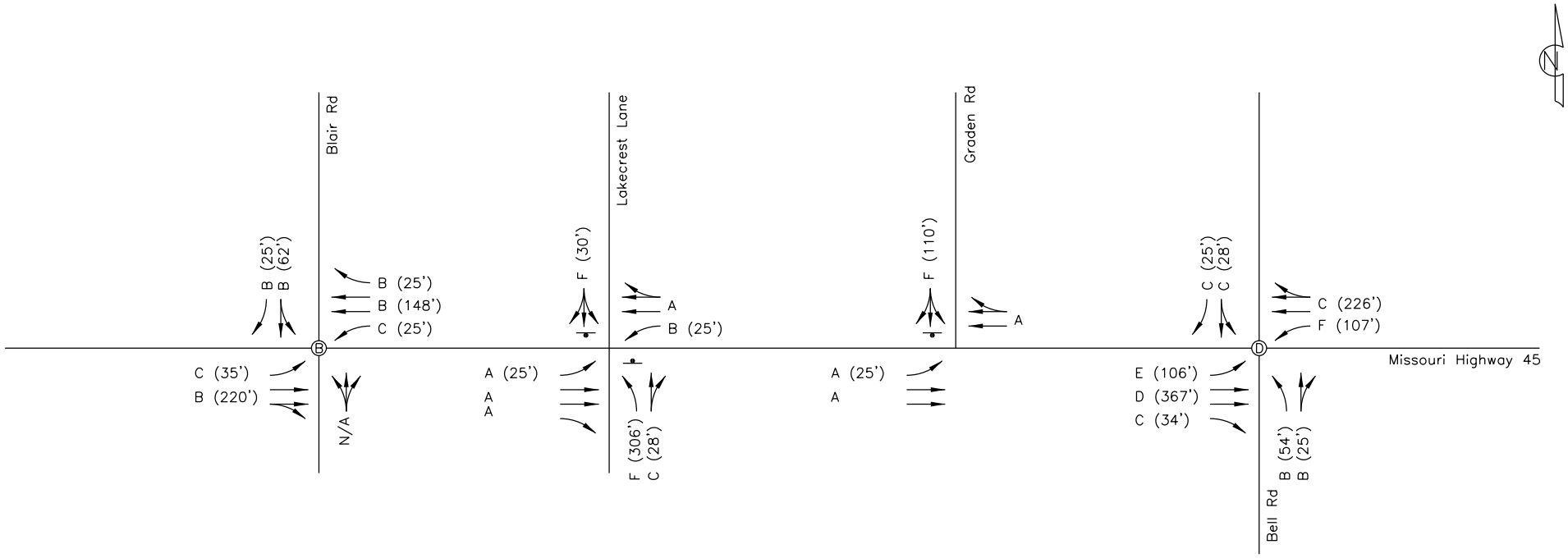
Garden City, MO 64747
816.738.4400



LEGEND

Total Volume (Proposed Development)

Future (2035) PM Peak Hour Traffic Volumes	Bella Vista Apartments Parkville, MO	No Scale Figure 12	Priority Engineers PO Box 563 Garden City, MO 64747 816.738.4400



LEGEND

- HCM LOS (95th Percentile Queue)
- Stop Sign
- Ⓐ Traffic Signal LOS

Future (2035) AM Peak Hour Lane Configuration & Levels of Service	Bella Vista Apartments Parkville, MO	No Scale Figure 13

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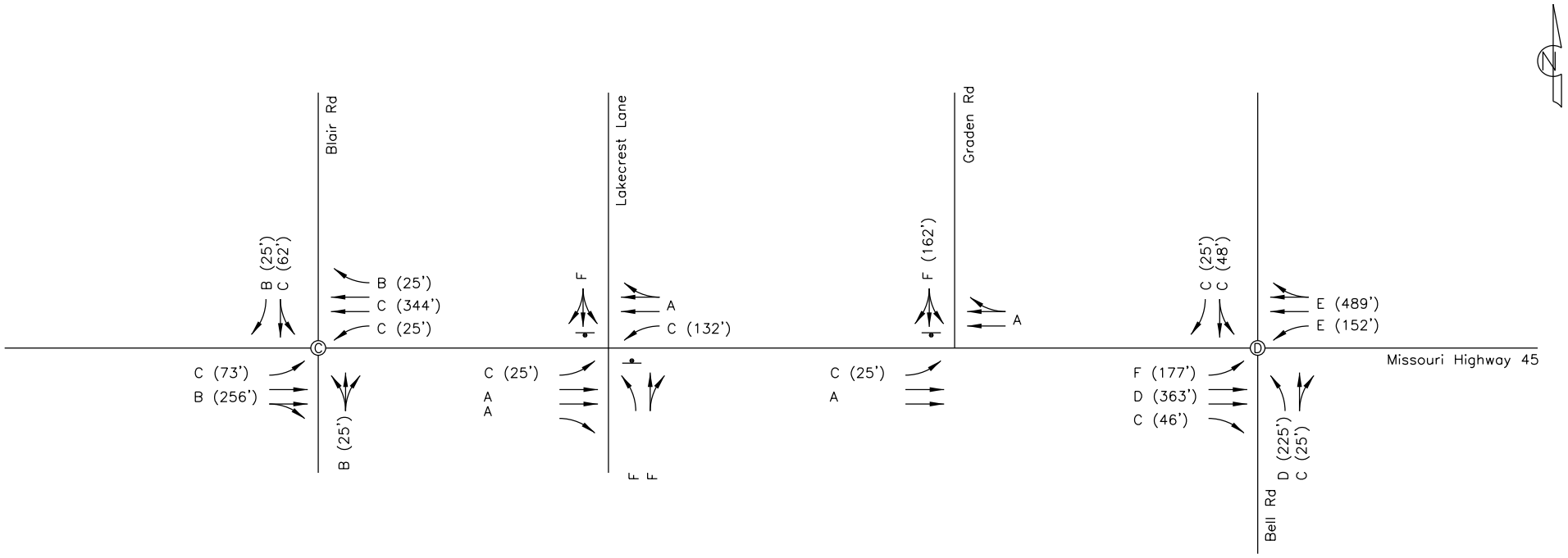

LEGEND

HCM LOS (95th Percentile Queue)

Stop Sign

Traffic Signal LOS

Future (2035) PM Peak Hour Lane Configuration & Levels of Service	Bella Vista Apartments Parkville, MO	No Scale Figure 14	Priority ENGINEERS PO Box 563 Garden City, MO 64747 816.738.4400

APPENDIX II

Peak Hour Traffic Counts

Synchro Reports

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MO 45 & Lakecrest Lane
3/3/2015 rdeitchler

	Southbound			Westbound			Northbound			Eastbound					
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**		
7:00	2	0	1	0	66	1	1	0	0	4	164	0	**239**		
7:15	1	0	2	1	99	6	0	0	0	3	147	0	**259**		
7:30	2	0	0	0	95	4	0	0	0	5	157	1	**264**		
7:45	3	0	0	0	115	5	0	0	0	10	129	0	**262**	1024	4652
8:00	3	0	0	2	80	2	0	0	3	13	133	0	**236**	1021	4562
8:15	2	0	1	1	57	5	0	0	1	6	141	1	**215**	977	4422
8:30	1	0	0	2	58	2	0	0	1	2	142	0	**208**	921	4232
8:45	2	0	0	0	88	5	0	0	1	7	124	0	**227**	886	4113
Totals	**8**	**0**	**3**	**1**	**375**	**16**	**1**	**0**	**0**	**22**	**597**	**1**	**1024**		
PHF	**0.67**		**0.38**	**0.25**	**0.82**	**0.67**	**0.25**			**0.55**	**0.91**	**0.25**			
Trucks	**0.125**		**0.333**		**0.048**						**0.028**				

MO 45 & Bell
3/3/2015 sbriscoe

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
7:00	0	0	0	13	69	0	8	0	26	12	149	27	**304**	
7:15	0	0	0	9	92	0	19	0	32	6	145	13	**316**	
7:30	0	0	0	21	97	0	15	0	25	3	141	19	**321**	
7:45	0	0	0	17	111	0	14	0	28	4	112	43	**329**	1270
8:00	0	0	0	15	67	0	14	0	22	2	130	35	**285**	1251
8:15	0	0	0	16	59	0	15	0	30	1	135	27	**283**	1218
8:30	0	0	0	42	55	0	14	0	41	7	103	43	**305**	1202
8:45	0	0	0	41	84	0	23	0	23	1	127	30	**329**	1202
Totals	**0**	**0**	**0**	**60**	**369**	**0**	**56**	**0**	**111**	**25**	**547**	**102**	**1270**	
PHF	**0**			**0.71**	**0.83**		**0.74**		**0.87**	**0.52**	**0.92**	**0.59**		
Trucks				**0.067**	**0.033**		**0.125**		**0.117**		**0.029**	**0.2**		

MO 45 & Blair
3/5/2015 rdeitchler

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
7:00	26	0	17	0	65	2	0	0	0	10	153	0	**273**	
7:15	21	0	12	0	88	9	0	0	0	5	155	2	**292**	
7:30	25	0	20	0	108	10	0	0	0	9	121	1	**294**	
7:45	11	0	10	2	100	12	0	0	0	15	138	1	**289**	1148
8:00	13	0	11	1	79	7	0	0	1	6	113	1	**232**	1107
8:15	27	0	8	0	85	7	0	0	1	10	125	2	**265**	1080
8:30	16	0	5	0	71	9	0	0	0	6	116	0	**223**	1009
8:45	25	1	7	0	74	11	0	0	2	6	110	1	**237**	957
Totals	**83**	**0**	**59**	**2**	**361**	**33**	**0**	**0**	**0**	**39**	**567**	**4**	**1148**	
PHF	**0.8**		**0.74**	**0.25**	**0.84**	**0.69**				**0.65**	**0.91**	**0.5**		
Trucks	**0.024**		**0.017**		**0.058**	**0.061**				**0.051**	**0.032**			

MO 45 & Graden
3/4/2015 sbriscoe

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
7:00	17	0	2	0	73	5	0	0	0	11	166	0	**274**	
7:15	13	0	0	0	100	8	0	0	0	2	192	0	**315**	
7:30	14	0	1	0	140	9	0	0	0	1	149	0	**314**	
7:45	22	0	0	0	116	8	0	0	0	2	159	0	**307**	1210
8:00	14	0	1	0	95	6	0	0	0	2	129	0	**247**	1183
8:15	8	0	2	0	95	11	0	0	0	1	162	0	**279**	1147
8:30	17	0	0	0	100	8	0	0	0	0	142	0	**267**	1100
8:45	12	0	0	0	102	10	0	0	0	2	149	0	**275**	1068
Totals	**66**	**0**	**3**	**0**	**429**	**30**	**0**	**0**	**0**	**16**	**666**	**0**	**1210**	
PHF	**0.75**		**0.38**		**0.77**	**0.83**				**0.36**	**0.87**			
Trucks	**0.015**				**0.049**	**0.067**					**0.029**			

MO 45 & Lakecrest Lane
3/3/2015 rdeitchler

	Southbound			Westbound			Northbound			Eastbound					
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**		
16:00	9	0	0	1	138	12	0	0	0	9	123	0	**292**		
16:15	5	0	1	1	163	5	0	0	0	1	140	0	**316**		
16:30	3	0	0	1	136	6	0	0	1	6	152	0	**305**		
16:45	6	0	0	0	173	10	0	0	0	7	140	0	**336**	1249	5302
17:00	8	0	1	1	179	9	0	0	4	5	172	0	**379**	1336	5646
17:15	6	0	2	0	193	8	2	0	5	11	151	0	**378**	1398	5922
17:30	1	0	1	1	181	4	0	0	1	23	170	0	**382**	1475	6255
17:45	2	0	0	0	158	10	0	0	0	7	136	0	**313**	1452	6280
Totals	**17**	**0**	**4**	**2**	**711**	**31**	**2**	**0**	**10**	**46**	**629**	**0**	**1452**		
PHF	**0.66**		**0.5**	**0.5**	**0.94**	**0.77**	**0.25**		**0.5**	**0.5**	**0.92**				
Trucks	**0.048**				**0.008**					**0.022**	**0.008**				

MO 45 & Bell
3/3/2015 sbriscoe

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
16:00	0	0	0	28	129	0	26	0	49	0	127	24	**383**	
16:15	0	0	0	34	137	0	46	0	36	0	121	30	**404**	
16:30	0	0	0	27	119	0	42	0	30	0	143	38	**399**	
16:45	0	0	0	27	156	0	50	0	16	0	131	29	**409**	1595
17:00	0	0	0	25	163	0	46	0	34	0	149	47	**464**	1676
17:15	0	0	0	26	158	0	60	0	33	0	154	35	**466**	1738
17:30	0	0	0	25	154	0	66	0	34	0	182	34	**495**	1834
17:45	0	0	0	16	152	0	40	0	40	0	123	29	**400**	1825
Totals	**0**	**0**	**0**	**92**	**627**	**0**	**212**	**0**	**141**	**0**	**608**	**145**	**1825**	
PHF				**0.95**	**0.97**		**0.84**		**0.86**		**0.85**	**0.77**		
Trucks				**0.058**	**0.008**		**0.009**		**0.026**		**0.006**	**0.021**		

MO 45 & Blair
3/4/2015 rdeitchler

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
16:00	16	0	10	0	119	16	0	1	2	11	99	0	**274**	
16:15	14	0	7	0	140	16	0	0	0	10	90	1	**278**	
16:30	6	0	9	0	126	19	0	0	0	12	122	1	**295**	
16:45	10	0	16	2	167	22	0	0	0	10	130	0	**357**	1204
17:00	18	1	15	0	156	26	0	0	1	21	141	2	**381**	1311
17:15	17	0	8	0	126	28	1	0	2	14	135	3	**334**	1367
17:30	13	0	14	0	173	14	0	2	1	16	146	0	**379**	1451
17:45	17	0	6	1	163	19	0	0	1	16	158	2	**383**	1477
Totals	**65**	**1**	**43**	**1**	**618**	**87**	**1**	**2**	**5**	**67**	**580**	**7**	**1477**	
PHF	**0.9**	**0.25**	**0.72**	**0.25**	**0.89**	**0.78**	**0.25**	**0.25**	**0.62**	**0.8**	**0.92**	**0.58**		
Trucks					**0.011**						**0.009**			

MO 45 & Graden
3/4/2015 sbriscoe

	Southbound			Westbound			Northbound			Eastbound				
Start Time	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Left**	**Through**	**Right**	**Totals**	
16:00	17	0	0	0	141	19	0	0	0	4	119	0	**300**	
16:15	8	0	1	0	151	17	0	0	0	7	96	0	**280**	
16:30	6	0	1	0	153	23	0	0	0	4	126	0	**313**	
16:45	7	0	0	0	180	18	0	0	0	4	152	0	**361**	1254
17:00	4	0	0	0	171	15	0	0	0	2	177	0	**369**	1323
17:15	12	0	0	0	176	30	0	0	0	6	152	0	**376**	1419
17:30	12	0	1	0	192	28	0	0	0	4	152	0	**389**	1495
17:45	2	0	0	0	181	25	0	0	0	5	179	0	**392**	1526
Totals	**30**	**0**	**1**	**0**	**720**	**98**	**0**	**0**	**0**	**17**	**660**	**0**	**1526**	
PHF	**0.62**		**0.25**		**0.94**	**0.82**				**0.71**	**0.92**			
Trucks					**0.007**						**0.009**			

Lane Group	EBL	EBT	WBL	WBT	WBR	SBT	SBR
Lane Group Flow (vph)	60	675	8	454	51	111	80
v/c Ratio	0.30	0.55	0.06	0.53	0.10	0.18	0.10
Control Delay	26.3	15.9	19.5	15.0	2.4	13.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	15.9	19.5	15.0	2.4	13.5	0.2
Queue Length 50th (ft)	18	73	3	73	0	24	0
Queue Length 95th (ft)	34	141	3	96	2	58	0
Internal Link Dist (ft)		378		987		335	
Turn Bay Length (ft)	175		110		175		150
Base Capacity (vph)	205	1347	128	990	541	614	823
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.50	0.06	0.46	0.09	0.18	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	607	4	2	381	35	0	0	0	89	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00					1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85					1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00					0.95	1.00
Satd. Flow (prot)	1719	3499		1770	3406	1524					1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00					0.76	1.00
Satd. Flow (perm)	1719	3499		1770	3406	1524					1410	1583
Peak-hour factor, PHF	0.65	0.91	0.50	0.25	0.84	0.69	0.92	0.92	0.92	0.80	0.92	0.74
Adj. Flow (vph)	60	667	8	8	454	51	0	0	0	111	0	80
RTOR Reduction (vph)	0	1	0	0	0	38	0	0	0	0	0	51
Lane Group Flow (vph)	60	674	0	8	454	13	0	0	0	0	111	29
Heavy Vehicles (%)	5%	3%	2%	2%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm				Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	6.1	19.2		0.8	13.9	13.9					20.0	20.0
Effective Green, g (s)	6.1	19.2		0.8	13.9	13.9					20.0	20.0
Actuated g/C Ratio	0.11	0.35		0.01	0.25	0.25					0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0					3.0	3.0
Lane Grp Cap (vph)	190	1221		25	860	385					512	575
v/s Ratio Prot	0.03	c0.19		0.00	c0.13							
v/s Ratio Perm						0.01					c0.08	0.02
v/c Ratio	0.32	0.55		0.32	0.53	0.03					0.22	0.05
Uniform Delay, d1	22.5	14.4		26.8	17.7	15.5					12.1	11.3
Progression Factor	1.00	1.00		0.78	0.72	1.00					1.00	1.00
Incremental Delay, d2	1.0	0.5		7.2	0.6	0.0					1.0	0.2
Delay (s)	23.5	15.0		28.1	13.4	15.5					13.1	11.5
Level of Service	C	B		C	B	B					B	B
Approach Delay (s)		15.7			13.8			0.0			12.4	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	673	1	1	414	17	1	0	0	9	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.55	0.91	0.25	0.25	0.82	0.67	0.25	0.92	0.92	0.67	0.92	0.38
Hourly flow rate (vph)	40	740	4	4	505	25	4	0	0	13	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	530			744			1090	1360	372	975	1349	265
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			456			847	1151	37	718	1139	265
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.8	6.5	7.6
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.6
p0 queue free %	96			100			98	100	100	95	100	99
cM capacity (veh/h)	1033			976			216	167	911	255	170	648

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	40	493	251	4	337	194	4	21
Volume Left	40	0	0	4	0	0	4	13
Volume Right	0	0	4	0	0	25	0	8
cSH	1033	1700	1700	976	1700	1700	216	328
Volume to Capacity	0.04	0.29	0.15	0.00	0.20	0.11	0.02	0.06
Queue Length 95th (ft)	3	0	0	0	0	0	1	5
Control Delay (s)	8.6	0.0	0.0	8.7	0.0	0.0	22.0	16.7
Lane LOS	A			A			C	C
Approach Delay (s)	0.4			0.1			22.0	16.7
Approach LOS							C	C

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	28.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	16	666	429	30	66	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.36	0.87	0.77	0.83	0.75	0.38
Hourly flow rate (vph)	44	766	557	36	88	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	593				1047	297
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	491				964	182
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				62	99
cM capacity (veh/h)	1025				232	795

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	44	383	383	371	222	96
Volume Left	44	0	0	0	0	88
Volume Right	0	0	0	0	36	8
cSH	1025	1700	1700	1700	1700	246
Volume to Capacity	0.04	0.23	0.23	0.22	0.13	0.39
Queue Length 95th (ft)	3	0	0	0	0	44
Control Delay (s)	8.7	0.0	0.0	0.0	0.0	28.6
Lane LOS	A					D
Approach Delay (s)	0.5			0.0		28.6
Approach LOS						D

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	675	121	85	481	81	128
v/c Ratio	0.71	0.23	0.42	0.34	0.12	0.19
Control Delay	18.4	5.7	28.9	11.1	13.8	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	5.7	28.9	11.1	13.8	4.3
Queue Length 50th (ft)	114	4	26	42	19	0
Queue Length 95th (ft)	170	28	47	60	37	28
Internal Link Dist (ft)	682			450	599	
Turn Bay Length (ft)		140	200		60	
Base Capacity (vph)	1019	546	214	1784	665	676
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.22	0.40	0.27	0.12	0.19

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	621	111	60	399	60	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1583	1687	3505	1597	1442
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1583	1687	3505	1597	1442
Peak-hour factor, PHF	0.92	0.92	0.71	0.83	0.74	0.87
Adj. Flow (vph)	675	121	85	481	81	128
RTOR Reduction (vph)	0	88	0	0	0	79
Lane Group Flow (vph)	675	33	85	481	81	49
Heavy Vehicles (%)	3%	2%	7%	3%	13%	12%
Turn Type	NA	Perm	Prot	NA	pm+pt	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4			2	2
Actuated Green, G (s)	14.9	14.9	4.2	24.1	20.9	20.9
Effective Green, g (s)	14.9	14.9	4.2	24.1	20.9	20.9
Actuated g/C Ratio	0.27	0.27	0.08	0.44	0.38	0.38
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	949	428	128	1535	606	547
v/s Ratio Prot	c0.19		c0.05	0.14	c0.05	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.71	0.08	0.66	0.31	0.13	0.09
Uniform Delay, d1	18.1	14.9	24.7	10.1	11.1	10.9
Progression Factor	0.78	1.20	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1	12.2	0.1	0.5	0.3
Delay (s)	16.4	18.0	37.0	10.2	11.6	11.3
Level of Service	B	B	D	B	B	B
Approach Delay (s)	16.7			14.2	11.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	84	745	4	707	112	20	87	60
v/c Ratio	0.38	0.54	0.03	0.66	0.19	0.03	0.17	0.09
Control Delay	27.8	13.0	24.0	18.7	3.3	11.0	14.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	13.0	24.0	18.7	3.3	11.0	14.6	0.3
Queue Length 50th (ft)	26	72	1	103	0	3	21	0
Queue Length 95th (ft)	54	152	3	151	13	3	12	0
Internal Link Dist (ft)		378		987		511	335	
Turn Bay Length (ft)	175		110		175			150
Base Capacity (vph)	226	1665	150	1284	663	619	505	663
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.45	0.03	0.55	0.17	0.03	0.17	0.09

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	674	7	1	629	87	1	2	5	75	1	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3531		1770	3539	1583		1745			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96			0.75	1.00
Satd. Flow (perm)	1770	3531		1770	3539	1583		1694			1393	1583
Peak-hour factor, PHF	0.80	0.92	0.58	0.25	0.89	0.78	0.25	0.25	0.62	0.90	0.25	0.72
Adj. Flow (vph)	84	733	12	4	707	112	4	8	8	83	4	60
RTOR Reduction (vph)	0	2	0	0	0	77	0	5	0	0	0	40
Lane Group Flow (vph)	84	743	0	4	707	35	0	15	0	0	87	20
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	3.2	18.9		0.7	16.4	16.4		17.5			17.5	17.5
Effective Green, g (s)	3.2	18.9		0.7	16.4	16.4		17.5			17.5	17.5
Actuated g/C Ratio	0.06	0.36		0.01	0.31	0.31		0.34			0.34	0.34
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	108	1280		23	1114	498		569			467	531
v/s Ratio Prot	c0.05	c0.21		0.00	0.20							
v/s Ratio Perm						0.02		0.01			c0.06	0.01
v/c Ratio	0.78	0.58		0.17	0.63	0.07		0.03			0.19	0.04
Uniform Delay, d1	24.1	13.4		25.4	15.3	12.5		11.6			12.3	11.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	28.9	0.7		3.6	1.2	0.1		0.1			0.9	0.1
Delay (s)	53.0	14.1		29.0	16.5	12.6		11.7			13.1	11.8
Level of Service	D	B		C	B	B		B			B	B
Approach Delay (s)		18.0			16.0			11.7			12.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	708	0	2	711	31	2	0	10	19	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.92	0.92	0.50	0.94	0.77	0.25	0.92	0.50	0.66	0.92	0.50
Hourly flow rate (vph)	92	770	0	4	756	40	8	0	20	29	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	797			770			1348	1758	385	1373	1738	398
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	797			487			1139	1601	54	1167	1578	398
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			94	100	98	75	100	99
cM capacity (veh/h)	821			952			125	82	889	115	85	601

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	92	513	257	4	504	292	28	37
Volume Left	92	0	0	4	0	0	8	29
Volume Right	0	0	0	0	0	40	20	8
cSH	821	1700	1700	952	1700	1700	323	139
Volume to Capacity	0.11	0.30	0.15	0.00	0.30	0.17	0.09	0.26
Queue Length 95th (ft)	9	0	0	0	0	0	7	25
Control Delay (s)	9.9	0.0	0.0	8.8	0.0	0.0	17.2	39.9
Lane LOS	A			A			C	E
Approach Delay (s)	1.1			0.0			17.2	39.9
Approach LOS							C	E

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	17	720	743	98	33	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.92	0.94	0.82	0.62	0.25
Hourly flow rate (vph)	24	783	790	120	53	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	910				1289	455
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	734				1145	240
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				69	99
cM capacity (veh/h)	800				173	701

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	24	391	391	527	383	57
Volume Left	24	0	0	0	0	53
Volume Right	0	0	0	0	120	4
cSH	800	1700	1700	1700	1700	182
Volume to Capacity	0.03	0.23	0.23	0.31	0.23	0.31
Queue Length 95th (ft)	2	0	0	0	0	32
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	33.5
Lane LOS	A					D
Approach Delay (s)	0.3			0.0		33.5
Approach LOS						D

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	715	188	97	648	252	164
v/c Ratio	0.68	0.31	0.41	0.39	0.44	0.26
Control Delay	20.0	4.5	28.0	8.8	18.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	4.5	28.0	8.8	18.7	4.6
Queue Length 50th (ft)	104	0	30	58	67	0
Queue Length 95th (ft)	143	23	68	86	114	31
Internal Link Dist (ft)	682			450	599	
Turn Bay Length (ft)		140	200		60	
Base Capacity (vph)	1219	668	251	2080	573	619
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.28	0.39	0.31	0.44	0.26

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	608	145	92	629	212	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1568
Peak-hour factor, PHF	0.85	0.77	0.95	0.97	0.84	0.86
Adj. Flow (vph)	715	188	97	648	252	164
RTOR Reduction (vph)	0	133	0	0	0	112
Lane Group Flow (vph)	715	55	97	648	252	52
Heavy Vehicles (%)	2%	2%	2%	2%	2%	3%
Turn Type	NA	Perm	Prot	NA	pm+pt	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4			2	2
Actuated Green, G (s)	15.1	15.1	5.2	25.3	16.5	16.5
Effective Green, g (s)	15.1	15.1	5.2	25.3	16.5	16.5
Actuated g/C Ratio	0.29	0.29	0.10	0.49	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1031	461	177	1728	563	499
v/s Ratio Prot	c0.20		0.05	c0.18	c0.14	
v/s Ratio Perm		0.03				0.03
v/c Ratio	0.69	0.12	0.55	0.38	0.45	0.10
Uniform Delay, d1	16.3	13.5	22.2	8.3	14.0	12.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	3.4	0.1	2.6	0.4
Delay (s)	18.3	13.6	25.6	8.4	16.6	12.9
Level of Service	B	B	C	A	B	B
Approach Delay (s)	17.3			10.7	15.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	51.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	SBT	SBR
Lane Group Flow (vph)	60	684	8	490	52	111	80
v/c Ratio	0.30	0.55	0.06	0.56	0.11	0.18	0.10
Control Delay	26.6	15.9	21.0	16.3	1.8	13.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	15.9	21.0	16.3	1.8	13.6	0.2
Queue Length 50th (ft)	18	73	2	77	0	25	0
Queue Length 95th (ft)	34	143	3	102	2	58	0
Internal Link Dist (ft)		378		987		335	
Turn Bay Length (ft)	175		110		175		150
Base Capacity (vph)	202	1353	128	990	541	610	820
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.51	0.06	0.49	0.10	0.18	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	615	4	2	412	36	0	0	0	89	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00					1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85					1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00					0.95	1.00
Satd. Flow (prot)	1719	3499		1770	3406	1524					1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00					0.76	1.00
Satd. Flow (perm)	1719	3499		1770	3406	1524					1410	1583
Peak-hour factor, PHF	0.65	0.91	0.50	0.25	0.84	0.69	0.92	0.92	0.92	0.80	0.92	0.74
Adj. Flow (vph)	60	676	8	8	490	52	0	0	0	111	0	80
RTOR Reduction (vph)	0	1	0	0	0	39	0	0	0	0	0	51
Lane Group Flow (vph)	60	683	0	8	490	13	0	0	0	0	111	29
Heavy Vehicles (%)	5%	3%	2%	2%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm				Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	6.0	19.4		0.8	14.2	14.2					19.8	19.8
Effective Green, g (s)	6.0	19.4		0.8	14.2	14.2					19.8	19.8
Actuated g/C Ratio	0.11	0.35		0.01	0.26	0.26					0.36	0.36
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0					3.0	3.0
Lane Grp Cap (vph)	187	1234		25	879	393					507	569
v/s Ratio Prot	0.03	c0.20		0.00	c0.14							
v/s Ratio Perm						0.01					c0.08	0.02
v/c Ratio	0.32	0.55		0.32	0.56	0.03					0.22	0.05
Uniform Delay, d1	22.6	14.3		26.8	17.7	15.3					12.2	11.5
Progression Factor	1.00	1.00		0.85	0.78	1.00					1.00	1.00
Incremental Delay, d2	1.0	0.5		7.2	0.8	0.0					1.0	0.2
Delay (s)	23.6	14.9		29.9	14.6	15.3					13.2	11.6
Level of Service	C	B		C	B	B					B	B
Approach Delay (s)		15.6			14.9			0.0			12.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	673	9	22	414	17	33	7	83	9	2	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.55	0.91	0.25	0.25	0.82	0.67	0.25	0.92	0.92	0.67	0.92	0.38
Hourly flow rate (vph)	40	740	36	88	505	25	132	8	90	13	2	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	530			776			1257	1526	370	1237	1549	265
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			520			1056	1356	67	1034	1382	265
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.8	6.5	7.6
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.6
p0 queue free %	96			91			6	93	90	89	98	99
cM capacity (veh/h)	1033			935			141	116	881	118	111	648

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	40	370	370	36	88	337	194	132	98	24
Volume Left	40	0	0	0	88	0	0	132	0	13
Volume Right	0	0	0	36	0	0	25	0	90	8
cSH	1033	1700	1700	1700	935	1700	1700	141	582	162
Volume to Capacity	0.04	0.22	0.22	0.02	0.09	0.20	0.11	0.94	0.17	0.15
Queue Length 95th (ft)	3	0	0	0	8	0	0	162	15	12
Control Delay (s)	8.6	0.0	0.0	0.0	9.2	0.0	0.0	120.5	12.4	31.0
Lane LOS	A				A			F	B	D
Approach Delay (s)	0.4				1.3			74.5		31.0
Approach LOS								F		D

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	17	748	450	30	66	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.36	0.87	0.77	0.83	0.75	0.38
Hourly flow rate (vph)	47	860	584	36	88	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	621				1127	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	505				1036	180
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				57	99
cM capacity (veh/h)	1007				207	794

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	47	430	430	390	231	96
Volume Left	47	0	0	0	0	88
Volume Right	0	0	0	0	36	8
cSH	1007	1700	1700	1700	1700	220
Volume to Capacity	0.05	0.25	0.25	0.23	0.14	0.44
Queue Length 95th (ft)	4	0	0	0	0	51
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	33.4
Lane LOS	A					D
Approach Delay (s)	0.5			0.0		33.4
Approach LOS						D

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	754	130	85	504	84	128
v/c Ratio	0.74	0.24	0.47	0.35	0.13	0.19
Control Delay	18.8	4.7	32.2	10.9	14.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	4.7	32.2	10.9	14.0	4.3
Queue Length 50th (ft)	125	3	27	45	20	0
Queue Length 95th (ft)	184	20	49	63	37	28
Internal Link Dist (ft)	682			450	599	
Turn Bay Length (ft)		140	200		60	
Base Capacity (vph)	1083	579	184	1784	649	662
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.22	0.46	0.28	0.13	0.19

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	694	120	60	418	62	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3505	1583	1687	3505	1597	1442
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3505	1583	1687	3505	1597	1442
Peak-hour factor, PHF	0.92	0.92	0.71	0.83	0.74	0.87
Adj. Flow (vph)	754	130	85	504	84	128
RTOR Reduction (vph)	0	92	0	0	0	81
Lane Group Flow (vph)	754	38	85	504	84	47
Heavy Vehicles (%)	3%	2%	7%	3%	13%	12%
Turn Type	NA	Perm	Prot	NA	pm+pt	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4			2	2
Actuated Green, G (s)	16.0	16.0	3.6	24.6	20.4	20.4
Effective Green, g (s)	16.0	16.0	3.6	24.6	20.4	20.4
Actuated g/C Ratio	0.29	0.29	0.07	0.45	0.37	0.37
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1019	460	110	1567	592	534
v/s Ratio Prot	c0.22		c0.05	0.14	c0.05	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.74	0.08	0.77	0.32	0.14	0.09
Uniform Delay, d1	17.6	14.2	25.3	9.8	11.5	11.3
Progression Factor	0.81	1.05	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.1	27.9	0.1	0.5	0.3
Delay (s)	16.9	14.9	53.2	9.9	12.0	11.6
Level of Service	B	B	D	A	B	B
Approach Delay (s)	16.6			16.2	11.7	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	84	785	4	729	113	20	88	60
v/c Ratio	0.38	0.56	0.03	0.67	0.19	0.03	0.18	0.09
Control Delay	27.8	13.3	24.0	19.0	3.3	11.0	14.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	13.3	24.0	19.0	3.3	11.0	14.7	0.3
Queue Length 50th (ft)	26	76	1	107	0	3	21	0
Queue Length 95th (ft)	54	161	3	156	14	3	12	0
Internal Link Dist (ft)		378		987		511	335	
Turn Bay Length (ft)	175		110		175			150
Base Capacity (vph)	225	1658	150	1278	660	616	502	660
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.03	0.57	0.17	0.03	0.18	0.09

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	711	7	1	649	88	1	2	5	76	1	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	3531		1770	3539	1583		1745			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96			0.75	1.00
Satd. Flow (perm)	1770	3531		1770	3539	1583		1694			1391	1583
Peak-hour factor, PHF	0.80	0.92	0.58	0.25	0.89	0.78	0.25	0.25	0.62	0.90	0.25	0.72
Adj. Flow (vph)	84	773	12	4	729	113	4	8	8	84	4	60
RTOR Reduction (vph)	0	2	0	0	0	77	0	5	0	0	0	40
Lane Group Flow (vph)	84	783	0	4	729	36	0	15	0	0	88	20
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	3.2	19.1		0.7	16.6	16.6		17.5			17.5	17.5
Effective Green, g (s)	3.2	19.1		0.7	16.6	16.6		17.5			17.5	17.5
Actuated g/C Ratio	0.06	0.37		0.01	0.32	0.32		0.33			0.33	0.33
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	108	1289		23	1123	502		566			465	529
v/s Ratio Prot	c0.05	c0.22		0.00	0.21							
v/s Ratio Perm						0.02		0.01			c0.06	0.01
v/c Ratio	0.78	0.61		0.17	0.65	0.07		0.03			0.19	0.04
Uniform Delay, d1	24.2	13.5		25.5	15.3	12.5		11.7			12.4	11.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	28.9	0.8		3.6	1.3	0.1		0.1			0.9	0.1
Delay (s)	53.1	14.4		29.1	16.7	12.5		11.8			13.3	11.9
Level of Service	D	B		C	B	B		B			B	B
Approach Delay (s)		18.1			16.2			11.8			12.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	708	38	103	711	31	23	5	63	19	8	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.92	0.92	0.50	0.94	0.77	0.25	0.92	0.50	0.66	0.92	0.50
Hourly flow rate (vph)	92	770	41	206	756	40	92	5	126	29	9	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	797			811			1756	2162	385	1886	2183	398
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	797			532			1598	2056	52	1744	2079	398
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			77			0	84	86	0	73	99
cM capacity (veh/h)	821			915			38	33	891	27	32	601

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	92	385	385	41	206	504	292	92	131	45
Volume Left	92	0	0	0	206	0	0	92	0	29
Volume Right	0	0	0	41	0	0	40	0	126	8
cSH	821	1700	1700	1700	915	1700	1700	38	432	34
Volume to Capacity	0.11	0.23	0.23	0.02	0.23	0.30	0.17	2.43	0.30	1.34
Queue Length 95th (ft)	9	0	0	0	22	0	0	254	32	123
Control Delay (s)	9.9	0.0	0.0	0.0	10.1	0.0	0.0	876.3	16.9	452.2
Lane LOS	A				B			F	C	F
Approach Delay (s)	1.0				2.1			370.8		452.2
Approach LOS								F		F

Intersection Summary				
Average Delay	48.9			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	18	772	843	98	33	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.71	0.92	0.94	0.82	0.62	0.25
Hourly flow rate (vph)	25	839	897	120	53	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	1016				1427	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764				1227	191
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				64	99
cM capacity (veh/h)	749				146	726

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	25	420	420	598	418	61
Volume Left	25	0	0	0	0	53
Volume Right	0	0	0	0	120	8
cSH	749	1700	1700	1700	1700	163
Volume to Capacity	0.03	0.25	0.25	0.35	0.25	0.37
Queue Length 95th (ft)	3	0	0	0	0	40
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	39.7
Lane LOS	A					E
Approach Delay (s)	0.3			0.0		39.7
Approach LOS						E

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	771	195	97	740	265	164
v/c Ratio	0.72	0.32	0.47	0.45	0.44	0.26
Control Delay	20.8	4.4	31.7	9.8	18.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	4.4	31.7	9.8	18.0	4.3
Queue Length 50th (ft)	115	0	31	71	69	0
Queue Length 95th (ft)	156	23	#77	106	117	30
Internal Link Dist (ft)	682			450	599	
Turn Bay Length (ft)		140	200		60	
Base Capacity (vph)	1192	663	210	1963	596	636
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.29	0.46	0.38	0.44	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	655	150	92	718	223	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1568
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1568
Peak-hour factor, PHF	0.85	0.77	0.95	0.97	0.84	0.86
Adj. Flow (vph)	771	195	97	740	265	164
RTOR Reduction (vph)	0	137	0	0	0	110
Lane Group Flow (vph)	771	58	97	740	265	54
Heavy Vehicles (%)	2%	2%	2%	2%	2%	3%
Turn Type	NA	Perm	Prot	NA	pm+pt	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4			2	2
Actuated Green, G (s)	15.7	15.7	4.5	25.2	17.4	17.4
Effective Green, g (s)	15.7	15.7	4.5	25.2	17.4	17.4
Actuated g/C Ratio	0.30	0.30	0.09	0.48	0.33	0.33
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1056	472	151	1695	585	518
v/s Ratio Prot	c0.22		0.05	c0.21	c0.15	
v/s Ratio Perm		0.04				0.03
v/c Ratio	0.73	0.12	0.64	0.44	0.45	0.10
Uniform Delay, d1	16.5	13.4	23.3	9.0	13.9	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	9.0	0.2	2.5	0.4
Delay (s)	19.2	13.6	32.3	9.2	16.4	12.6
Level of Service	B	B	C	A	B	B
Approach Delay (s)	18.0			11.9	14.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	SBT	SBR
Lane Group Flow (vph)	60	1008	8	785	52	111	80
v/c Ratio	0.36	0.69	0.06	0.68	0.08	0.21	0.11
Control Delay	30.0	16.4	25.0	18.9	0.3	15.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	16.4	25.0	18.9	0.3	15.9	0.3
Queue Length 50th (ft)	19	103	3	111	0	28	0
Queue Length 95th (ft)	35	#220	4	148	0	62	0
Internal Link Dist (ft)		378		987		335	
Turn Bay Length (ft)	175		110		175		150
Base Capacity (vph)	167	1505	128	1190	623	518	732
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.67	0.06	0.66	0.08	0.21	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	910	4	2	659	36	0	0	0	89	0	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00					1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85					1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00					0.95	1.00
Satd. Flow (prot)	1719	3501		1770	3406	1524					1770	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00					0.76	1.00
Satd. Flow (perm)	1719	3501		1770	3406	1524					1410	1583
Peak-hour factor, PHF	0.65	0.91	0.50	0.25	0.84	0.69	0.92	0.92	0.92	0.80	0.92	0.74
Adj. Flow (vph)	60	1000	8	8	785	52	0	0	0	111	0	80
RTOR Reduction (vph)	0	1	0	0	0	34	0	0	0	0	0	56
Lane Group Flow (vph)	60	1007	0	8	785	18	0	0	0	0	111	24
Heavy Vehicles (%)	5%	3%	2%	2%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm				Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	5.0	23.0		0.8	18.8	18.8					16.2	16.2
Effective Green, g (s)	5.0	23.0		0.8	18.8	18.8					16.2	16.2
Actuated g/C Ratio	0.09	0.42		0.01	0.34	0.34					0.29	0.29
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0					5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0					3.0	3.0
Lane Grp Cap (vph)	156	1464		25	1164	520					415	466
v/s Ratio Prot	0.03	c0.29		0.00	c0.23							
v/s Ratio Perm						0.01					c0.08	0.01
v/c Ratio	0.38	0.69		0.32	0.67	0.03					0.27	0.05
Uniform Delay, d1	23.6	13.1		26.8	15.5	12.1					14.9	13.9
Progression Factor	1.00	1.00		1.00	1.00	1.00					1.00	1.00
Incremental Delay, d2	1.6	1.4		7.3	1.6	0.0					1.6	0.2
Delay (s)	25.1	14.4		34.1	17.0	12.1					16.4	14.1
Level of Service	C	B		C	B	B					B	B
Approach Delay (s)		15.0			16.9			0.0			15.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	968	9	22	661	17	33	7	83	9	2	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.55	0.91	0.25	0.25	0.82	0.67	0.25	0.92	0.92	0.67	0.92	0.38
Hourly flow rate (vph)	40	1064	36	88	806	25	132	8	90	13	2	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.79			0.79	0.79	0.79	0.79	0.79	
vC, conflicting volume	831			1100			1732	2151	532	1701	2175	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	831			590			1392	1924	0	1352	1953	416
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.8	6.5	7.6
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.6
p0 queue free %	95			89			0	83	89	75	95	98
cM capacity (veh/h)	797			774			67	44	855	53	42	507

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	40	532	532	36	88	537	294	132	98	24
Volume Left	40	0	0	0	88	0	0	132	0	13
Volume Right	0	0	0	36	0	0	25	0	90	8
cSH	797	1700	1700	1700	774	1700	1700	67	351	73
Volume to Capacity	0.05	0.31	0.31	0.02	0.11	0.32	0.17	1.98	0.28	0.32
Queue Length 95th (ft)	4	0	0	0	10	0	0	306	28	30
Control Delay (s)	9.8	0.0	0.0	0.0	10.2	0.0	0.0	592.5	19.2	75.6
Lane LOS	A				B			F	C	F
Approach Delay (s)	0.3				1.0			348.5		75.6
Approach LOS								F		F

Intersection Summary				
Average Delay	36.0			
Intersection Capacity Utilization	40.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	17	1043	697	30	66	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.36	0.87	0.77	0.83	0.75	0.38
Hourly flow rate (vph)	47	1199	905	36	88	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	941				1617	471
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	475				1304	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				25	99
cM capacity (veh/h)	883				117	884

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	47	599	599	603	338	96
Volume Left	47	0	0	0	0	88
Volume Right	0	0	0	0	36	8
cSH	883	1700	1700	1700	1700	126
Volume to Capacity	0.05	0.35	0.35	0.35	0.20	0.76
Queue Length 95th (ft)	4	0	0	0	0	110
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	91.9
Lane LOS	A					F
Approach Delay (s)	0.4			0.0		91.9
Approach LOS						F

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	933	189	115	783	126	190	43	24
v/c Ratio	0.64	0.97	0.32	0.91	0.72	0.22	0.25	0.13	0.04
Control Delay	59.2	52.7	4.0	100.4	29.4	13.8	0.8	14.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	52.7	4.0	100.4	29.4	13.8	0.8	14.8	0.1
Queue Length 50th (ft)	42	241	0	58	186	35	0	11	0
Queue Length 95th (ft)	#106	#367	34	#107	226	54	0	28	0
Internal Link Dist (ft)		682			450		599		254
Turn Bay Length (ft)	140		140	200		60		60	
Base Capacity (vph)	132	963	593	126	1091	565	759	326	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.97	0.32	0.91	0.72	0.22	0.25	0.13	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	858	174	82	612	42	93	0	165	40	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3505	1583	1687	3476		1597	1442		1770	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.56	1.00		0.64	1.00	
Satd. Flow (perm)	1770	3505	1583	1687	3476		938	1442		1188	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.83	0.92	0.74	0.92	0.87	0.92	0.92	0.92
Adj. Flow (vph)	84	933	189	115	737	46	126	0	190	43	0	24
RTOR Reduction (vph)	0	0	135	0	6	0	0	122	0	0	19	0
Lane Group Flow (vph)	84	933	54	115	778	0	126	68	0	43	5	0
Heavy Vehicles (%)	2%	3%	2%	7%	3%	2%	13%	2%	12%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4				2			6		
Actuated Green, G (s)	4.8	22.8	22.8	6.0	25.0		36.2	28.8		17.6	15.2	
Effective Green, g (s)	4.8	22.8	22.8	6.0	25.0		36.2	28.8		17.6	15.2	
Actuated g/C Ratio	0.06	0.29	0.29	0.08	0.31		0.45	0.36		0.22	0.19	
Clearance Time (s)	4.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	998	451	126	1086		556	519		278	300	
v/s Ratio Prot	0.05	c0.27		c0.07	0.22		c0.05	0.05		0.00	0.00	
v/s Ratio Perm			0.03				c0.06			0.03		
v/c Ratio	0.79	0.93	0.12	0.91	0.72		0.23	0.13		0.15	0.02	
Uniform Delay, d1	37.1	27.9	21.2	36.7	24.4		13.2	17.2		24.9	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.1	15.2	0.1	53.9	2.3		0.9	0.5		0.3	0.1	
Delay (s)	69.2	43.0	21.3	90.6	26.6		14.1	17.7		25.2	26.4	
Level of Service	E	D	C	F	C		B	B		C	C	
Approach Delay (s)		41.4			34.8			16.3			25.6	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	103	1156	4	1373	128	8	96	58
v/c Ratio	0.90	0.62	0.03	0.97	0.18	0.02	0.27	0.10
Control Delay	96.6	12.4	27.0	36.6	3.2	12.6	19.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	12.4	27.0	36.6	3.2	12.6	19.9	0.3
Queue Length 50th (ft)	38	126	1	244	0	1	27	0
Queue Length 95th (ft)	#73	256	2	#344	13	9	62	0
Internal Link Dist (ft)		378		987		511	335	
Turn Bay Length (ft)	175		110		175			150
Base Capacity (vph)	114	1878	118	1419	709	445	359	582
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.62	0.03	0.97	0.18	0.02	0.27	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	1039	7	1	1153	88	1	2	5	76	1	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1719	3499		1770	3406	1524		1695			1775	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97			0.72	1.00
Satd. Flow (perm)	1719	3499		1770	3406	1524		1655			1347	1583
Peak-hour factor, PHF	0.65	0.91	0.50	0.25	0.84	0.69	0.92	0.92	0.92	0.80	0.92	0.74
Adj. Flow (vph)	103	1142	14	4	1373	128	1	2	5	95	1	58
RTOR Reduction (vph)	0	1	0	0	0	75	0	4	0	0	0	46
Lane Group Flow (vph)	103	1155	0	4	1373	53	0	4	0	0	96	12
Heavy Vehicles (%)	5%	3%	2%	2%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		6
Actuated Green, G (s)	8.0	32.2		0.8	25.0	25.0		12.0			12.0	12.0
Effective Green, g (s)	8.0	32.2		0.8	25.0	25.0		12.0			12.0	12.0
Actuated g/C Ratio	0.13	0.54		0.01	0.42	0.42		0.20			0.20	0.20
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	229	1877		23	1419	635		331			269	316
v/s Ratio Prot	0.06	c0.33		0.00	c0.40							
v/s Ratio Perm						0.04		0.00			c0.07	0.01
v/c Ratio	0.45	0.62		0.17	0.97	0.08		0.01			0.36	0.04
Uniform Delay, d1	24.0	9.6		29.3	17.1	10.6		19.2			20.7	19.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	1.4	0.6		3.6	16.6	0.1		0.1			3.7	0.2
Delay (s)	25.4	10.2		32.9	33.7	10.6		19.3			24.3	19.6
Level of Service	C	B		C	C	B		B			C	B
Approach Delay (s)		11.5			31.7			19.3			22.5	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	1036	38	103	1215	31	23	5	63	19	8	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.55	0.91	0.25	0.25	0.82	0.67	0.25	0.92	0.92	0.67	0.92	0.38
Hourly flow rate (vph)	84	1138	152	412	1482	46	92	5	68	28	9	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.82			0.82	0.82	0.82	0.82	0.82	
vC, conflicting volume	1528			1290			2885	3658	569	3137	3787	764
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1528			927			2861	3797	53	3166	3954	764
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.8	6.5	7.6
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.0	3.6
p0 queue free %	81			32			0	0	92	0	0	96
cM capacity (veh/h)	432			605			0	1	827	0	1	286

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	84	569	569	152	412	988	540	92	74	48
Volume Left	84	0	0	0	412	0	0	92	0	28
Volume Right	0	0	0	152	0	0	46	0	68	11
cSH	432	1700	1700	1700	605	1700	1700	0	11	0
Volume to Capacity	0.19	0.33	0.33	0.09	0.68	0.58	0.32	Err	6.68	Err
Queue Length 95th (ft)	18	0	0	0	132	0	0	Err	Err	Err
Control Delay (s)	15.3	0.0	0.0	0.0	22.7	0.0	0.0	Err	Err	Err
Lane LOS	C				C			F	F	F
Approach Delay (s)	0.9				4.8			Err		Err
Approach LOS								F		F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	56.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	18	1100	1347	98	33	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.36	0.87	0.77	0.83	0.75	0.38
Hourly flow rate (vph)	50	1264	1749	118	44	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			762			
pX, platoon unblocked	0.66				0.66	0.66
vC, conflicting volume	1867				2541	934
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1282				2303	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				0	99
cM capacity (veh/h)	354				18	715

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	50	632	632	1166	701	49
Volume Left	50	0	0	0	0	44
Volume Right	0	0	0	0	118	5
cSH	354	1700	1700	1700	1700	20
Volume to Capacity	0.14	0.37	0.37	0.69	0.41	2.41
Queue Length 95th (ft)	12	0	0	0	0	162
Control Delay (s)	16.8	0.0	0.0	0.0	0.0	1037.3
Lane LOS	C					F
Approach Delay (s)	0.6			0.0		1037.3
Approach LOS						F

Intersection Summary			
Average Delay	16.1		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	117	875	239	193	1308	441	241	68	103
v/c Ratio	0.99	0.89	0.38	0.87	1.05	0.88	0.35	0.22	0.20
Control Delay	126.1	44.4	4.8	74.9	70.7	42.5	2.1	19.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.1	44.4	4.8	74.9	70.7	42.5	2.1	19.0	0.9
Queue Length 50th (ft)	68	251	0	109	~431	195	0	23	0
Queue Length 95th (ft)	#177	#363	46	#152	#489	225	14	48	0
Internal Link Dist (ft)		682			450		599		254
Turn Bay Length (ft)	140		140	200		60		60	
Base Capacity (vph)	118	978	625	224	1241	503	698	312	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.89	0.38	0.86	1.05	0.88	0.35	0.22	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	805	220	137	1024	68	326	0	210	63	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3505	1583	1687	3477		1597	1442		1770	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.53	1.00		0.61	1.00	
Satd. Flow (perm)	1770	3505	1583	1687	3477		897	1442		1134	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.83	0.92	0.74	0.92	0.87	0.92	0.92	0.92
Adj. Flow (vph)	117	875	239	193	1234	74	441	0	241	68	0	103
RTOR Reduction (vph)	0	0	172	0	5	0	0	163	0	0	84	0
Lane Group Flow (vph)	117	875	67	193	1303	0	441	78	0	68	19	0
Heavy Vehicles (%)	2%	3%	2%	7%	3%	2%	13%	2%	12%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4				2			6		
Actuated Green, G (s)	6.0	25.1	25.1	11.9	32.0		38.0	29.0		21.0	17.0	
Effective Green, g (s)	6.0	25.1	25.1	11.9	32.0		38.0	29.0		21.0	17.0	
Actuated g/C Ratio	0.07	0.28	0.28	0.13	0.36		0.42	0.32		0.23	0.19	
Clearance Time (s)	4.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	118	977	441	223	1236		503	464		292	299	
v/s Ratio Prot	0.07	0.25		c0.11	c0.37		c0.16	0.05		0.01	0.01	
v/s Ratio Perm			0.04				c0.21			0.04		
v/c Ratio	0.99	0.90	0.15	0.87	1.05		0.88	0.17		0.23	0.07	
Uniform Delay, d1	42.0	31.2	24.4	38.3	29.0		22.0	21.9		27.5	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	80.0	10.6	0.2	27.7	41.3		19.0	0.8		0.4	0.4	
Delay (s)	121.9	41.8	24.6	65.9	70.3		41.0	22.6		27.9	30.4	
Level of Service	F	D	C	E	E		D	C		C	C	
Approach Delay (s)		46.1			69.7			34.5			29.4	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group